THE OPTICAL

MAGIC LANTERN

JOURNAL

AND

PHOTOGRAPHIC ENLARGER.

EDITED BY J. HAY TAYLOR.

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Notices.

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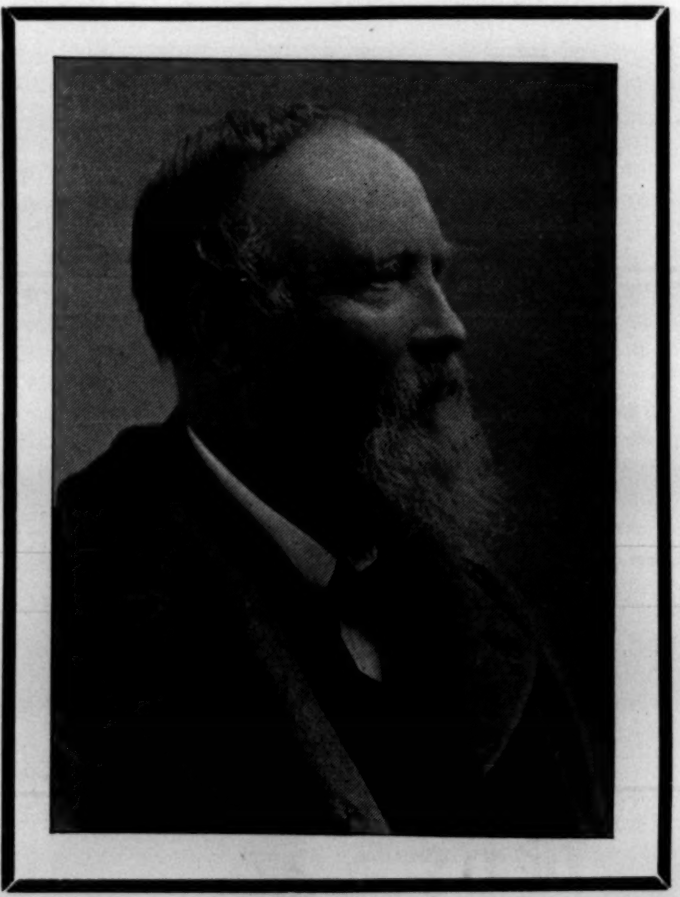
THE melancholy news of the sudden death of my father, J. Traill Taylor, has already been announced in several papers, including the *British Journal of Photography*, the editorial chair of which he occupied for about a third of a century. On October 5th his family and a few friends saw him off at Waterloo Station on an eight weeks' trip to New York



J. TRAILL TAYLOR.

Born Jan. 23rd, 1827. *Died Nov. 8th, 1895.*

and Florida to wish him an enjoyable holiday. Three days after his arrival at Florida he had an attack of typhoid-dysentry, to which he succumbed after ten days' illness, on the morning of the 8th ult., two medical men being in attendance. His remains lie interred at the cemetery at Lane Park, Fla., U.S.A., about half-a-mile from his orange grove. The great estimation in which he was held as a scientist, writer, and true friend by a very large circle of friends and workers in every part of the globe is universally known. Since the sad news was published, I have received a great number of letters from professional and other friends with condolences to the family, and on behalf of my sister, my two brothers and myself I thank them for their kind expressions of sympathy in our bereavement.

J. Hay Taylor.

Notes.

The Moonlight Patent Lamp Company, of Liverpool, are now making small pocket cans for containing a supply of benzoline for use with their vapour lamps, which have recently been awarded a gold medal at the Belfast Industrial Exhibition.

Seeing their slides were received so favourably last season, Messrs. Elliman & Son, of Slough, are again issuing a new set of coloured slides. An idea of the general subjects will be seen from the large illustration in their advertisement.

* * *

Honours have again fallen to Messrs. Newton and Co., of Fleet Street; their lanterns have been selected by the London School Board; and they have been commissioned by the Colonial Office to supply the sets of two lantern slides (plain and coloured) of Her Majesty the Queen, which have been presented to King Khama and two other Buchuana Chiefs. They have also a good set of 42 slides in readiness on Ashantee.

* * *

From an advertisement on another page, it will be seen that Messrs. Bird & Son, of Birmingham (of Bird's Custard Powder fame), are prepared to lend to lanternists willing to exhibit them, a set of four slides, the paintings from which they are reproduced being the property of the firm.

* * *

Several instances of delays on the part of railways have come under our notice lately. At Lichfield a lantern lecture had to be given pictureless, and in another instance, an operator who had gone to a distant town, finding that the time for the entertainment was drawing close at hand and that the gas had not arrived, set upon a pilgrimage through the town to try and hire gas-bags, retorts and chlorate of potash, and after an hour succeeded in finding an amateur who had recently had his two cylinders filled. This, luckily, held the lecture out all but the last two slides. From the foregoing samples, the reader will see the desirability of sending supplies of gas well ahead, for on many occasions the gas is delivered a day too late.

* * *

Those desirous of getting a particularly good and humorous set of Robinson Crusoe will do well to look at an advertisement in this issue, as it is not an everyday occurrence to be able to get such an excellent set of hand-painted slides.

* * *

The Evening Continuation School at Doddington have adopted the lantern in connection with many of their subjects of instruction.

* * *

Mr. W. A. Dawkins, of Birmingham, has formed his business into a Limited Company, with a capital of £10,000 in £1 shares.

Mr. John Pearce, the limelight operator at Covent Garden Theatre, has been highly commended by the *Times* in connection with the recent explosion in the Strand. On his way home he visited the scene of the disaster. There he found that search was being made for the unfortunate fireman Sprague, who lay buried somewhere under the ruins. The work was being conducted with the aid of miserable lamps and torches, and Pearce, as a professional "illuminator," was immediately struck with the inadequate lighting arrangements. With commendable enterprise he at once sought out the superintendent, Captain Fox, and obtained his permission to light up the scene of the operations. To jump into a cab, hasten back to Covent Garden, and to return with his limelight box and two cylinders (one containing hydrogen and the other oxygen) was the work of little more than ten minutes. A few moments later, from the second floor of one of the half-wrecked houses, he poured a brilliant flood of light upon the workers, rendering most valuable assistance to these gallant fellows. Pearce remained at his post till after two o'clock in the morning.

* * *

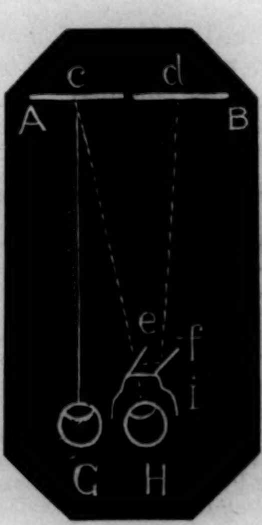
Dr. Frank Clowes finds that air is capable of supporting respiration when the oxygen is so far exhausted as to fail to support a flame. Candle and lamp flames are extinguished by air containing about 16·5 per cent. of oxygen. Coal gas flames by a mixture containing only 11·3 per cent. of oxygen. Air may be breathed by a healthy person without harm until the oxygen is reduced to 10 per cent., and when the maximum amount of carbonic dioxide present is considerably above 3 per cent.

—:o:—

Coalescence of Similar Images by the Stereoscope.

When one undertakes to give a lecture before a photographic society on the stereoscope the presumption is that the lecturer, at least understands the principles pertaining to such. On two, if not three occasions, Mr. Radiant has discoursed upon the stereoscope, but according to an article by him, which appeared in a contemporary dated November 1st, he admits that he has yet much to learn upon the subject. He goes on to quote a portion of an article from *Answers*, in which it was stated that if two printings from the same type were placed side by side in a stereoscope, they would appear as one, whereas, if one were altered, the blending not being perfect, the alteration or erasure would become apparent to the person viewing them. In reply to this, Radiant says: "Having devoted a considerable part of a scanty leisure to the study of stereoscopic theory and practice, I was beginning to imagine that I knew something of the subject, but the interesting article in *Answers* convinces me that I have yet much to learn upon it. It all amounts to this, if what is said in the article is correct, that the stereoscope possesses the hitherto *unsuspected* power of blending or coalescing two absolutely similar images."

On the presumption that Radiant (who by his own showing is not very well up in the subject) wishes to learn, we would inform him that the stereoscope does possess the power of "blending" or coalescing two absolutely similar images, and as a means of assisting him to ascertain this, would suggest his procuring the cheapest form of stereoscope (seeing that he has, as stated in his article, "run short of flimsies"), and if he will consult our advertising columns, he will find particulars of a pocket stereoscope only a little larger than the size shown in the illustration. If he uses it according to the issued instructions, with two similar images or prints, he will at once see the error of his remarks. The two similar prints should be placed at A B, and the scope adjusted as shown at the right eye, whilst both eyes are directed towards A; he will then be enabled to know what he evidently did not know before.



We may here say that when an ordinary stereoscopic slide is placed as shown it will of course be seen stereoscopically, and that if two halves of a stereoscopic transparency be projected side by side on a screen, and the pocket stereoscope used for inspecting them, the view will also be seen in the same manner.

A Lantern Lecture by Electrophone.

A LECTURE—the first of its kind—was delivered in London on the 11th ulto., in two places simultaneously, the subject being "Prison Life"; the slides being from the negatives of Soper & Stedman, Limited, 147, Strand.

This lecture was one of a series by Messrs. Nettleship & Rose, of Highbury Quadrant, N., and was given under strange conditions. The lecture proper, if it may be so termed, took place at the Highbury Quadrant Literary Association, where a goodly audience was assembled. About five miles from this place there was also assembled a small audience at the reception room of the Electrophone Company, Pelican House, Gerrard Street, Shaftesbury Avenue, W. As we had received an invitation to the latter place, we repair thither, and soon got comfortably seated with about twenty others in luxuriant arm chairs, and found that Messrs. Airs, of "Bessus" fame, had rigged up one of their well-known lanterns, and that Mr. Rose had a duplicate set of the slides which were about to be shown at Highbury.

Presently, a bell rang, and we were directed to hold an ornate piece of mechanism, consisting of two receivers and a long handle, to our ears—each chair was provided with receivers—and we heard the chairman at Highbury announce the lecture and introduce the lecturer. Then, the first picture was projected on the screen, and the lecture began. Every word was plainly heard, in fact, plainer than had the lecturer been present instead of five miles away; and in this manner Mr. Nettleship gave us a graphic description of life in a prison, including—

The Royal Omnibus—The Raw Material—Passing the Doctor—The Photographer and the Barber—In the Workshops—"Prison-made Goods"—Shoe-making—Tailoring—Brush-making—Mat-making—Bag-making—The Kitchen and Bakehouse—Exercise—The Letter House—Punishments—Revolutions in Prison—The Crank—The Treadmill—The Lash—Punishment in Olden Times—"Murderer's Walk"—"The Angel of Mercy"—The Doctor—The Chaplain—In the Infirmary—Delicacies in Prison—Visitors—Prison Fare—Insanity in Prison—Weighing the Bread—Christmas in Prison—Women in Jail—Women's labour—The Workrooms—The Laundry—The Punishment of Women—The Lash for Women?—Baby's Parade—The Convict at School—The Stone Quarries at Portland—Making the Breakwater—Imprisonment for longer than life—The effect of Prisons on Prisoners—Types of Prisoners—Old Offenders—Married men in Prison—The Warders and Matrons and their work, etc., etc.

Mr. Rose, his colleague, stood at our end beside the lantern with a species of scull cap with two receivers, and a wire connecting him with the wall, he notified to Mr. Airs, who was at the lantern, the exact time to change the slides.

We have no recollection of ever having been at a lantern exhibition where everything ran smoother. The photographers, Soper & Stedman, had produced the slides of excellent quality; Mr. Nettleship spoke clearly and distinctly; the "Bessus" lantern was perfection; Mr. Rose was prompt in action; the lecture was of a particularly interesting nature, and the Electrophone Company had provided what was in reality a drawing-room; so that under these combinations the audience had a treat such as had never before been given.

After the lecture, the Electrophone Co., by a series of switching on, put us in communication with most of the theatres for a few minutes each; so that, comfortably seated as we were, we practically took a round of the theatres, heard a song at one, instrumental music at another, and so on, everything being heard as distinctly as could have been at the theatre itself.

We learn that arrangements have been made by this Company whereby they have placed receivers at the footlights of the various theatres and halls, and that they are now running wires to private houses; so that all one has to do is to ring up the Company, say "connect me with so and so concert hall," take a comfortable seat beside one's own fireside, and enjoy a concert given many miles away, all with the same clearness as though one were actually present at the place. In this manner, one may be even confined to bed, yet have the privilege of enjoying good music or other entertainment.

—:o:—

The Phantasmagoria.†—II.

By Edmund H. Wilkie,

(Late Royal Polytechnic Institution).

UNTIL comparatively lately the only means of powerfully illuminating the Phantasmagoria pictures and effects was the lime-light arrangement, consisting of "bags and boards," or gas-holders, and the extreme length of tubing required to connect the small lanterns with the gas supply and at the same time allow the operator to walk about the stage carrying the lantern, was found to be such a serious impediment that powerful oil lamps were used instead of limelight, and answered fairly well.

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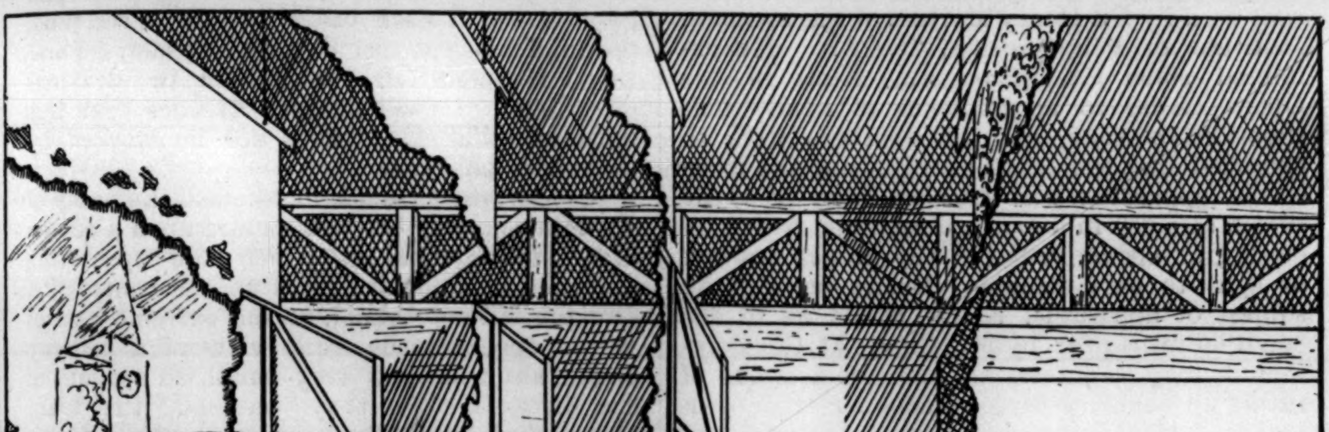
To realise the different effects of which the Phantasmagoria is capable, we need two movements in the small or "independent" lanterns. One at least should be mounted on a stand carrying boards, bags, and lantern, and running on wheels to and from the screen, the other small lanterns to any number may be either carried under the arms by assistants, or slung round the neck by straps, so that they may be carried to and from the screen and directed to any portion of it as necessity demands. We shall see the importance of this as we advance further.



In France several forms of lanterns mounted on wheels have been designed with movements connecting the wheels with the focussing apparatus, in order that the lantern may automatically arrange its own focus as it advances or retires, but all these arrangements have been found unreliable and consequently unsatisfactory, so have been abandoned.

In Mr. Childe's original phantasmagoria the whole of the operations took place behind the screen, and in that case it was necessary to raise the lantern containing the foundation picture some distance above the level of the stage, leaving room below for the assistants with the smaller lanterns. In the earlier attempts nothing was done to obviate the optical incongruity of the distant figures appearing brighter than those in the foreground. In Nature all distant objects appear obscured or diminished in brightness in proportion to their distance from the observer, but in the earlier phantasmagoria exhibitions this state of things was reversed.

For instance, a figure appearing to be four feet in height on the screen would gradually retire and diminish to half its original size, appearing to be further away from the observer, but it would then be four times as bright owing to the rays of light from the lantern being concentrated into so much smaller a space.

Pieces of crape were then introduced in front of the objective to overcome this defect, removing them as the lantern was wheeled further from the screen, but although this was an improvement it was clumsy in working.

By far the most perfect arrangement was that used by Dr. Henry Morton, of the Franklin Institute of Pennsylvania, U.S.A.* He exhibited some Phantasmagoria effects in the Opera House to an audience of nearly four thousand persons, and his lanterns were so arranged that the action of regulating the focus as the apparatus was wheeled to or from the screen also put in action a diaphragm which by closing or opening allowed the proper amount of light to pass through. Before leaving the subject of apparatus, a few words as to the small lanterns used by Mr. Childe at the Polytechnic may be interesting to those desirous of fitting up some of these effects for their own use.

The small or breast lanterns were the usual old-fashioned shape, made of Japanned block tin, the sources of light being solar fountain colza oil lamps, which were kept in their places by being hooked on to the inside of the lantern body by means of a broad flat hook. When it was necessary to shut the image off, a soft woollen ball was inserted in the nozzle and effectually cut off the light, the balls being connected to the fronts of the lanterns by lengths of thin chain, so that they were always to be found in a moment when in the dark. In these days of triple lanterns some of the effects can be realised in the ordinary way, but it will be seen that the most important of them need the advancing, receding and independent motions.

Now let us review a few of the effects which were considered the most beautiful and impressive. In most optician's catalogues will be found a set of three slides, showing a vase of flowers, first in bud, then in blossom, and finally faded and dead, leaving only a single rose still in bloom; these need the most perfect registration, and can be used in an ordinary double lantern, but in the Phantasmagoria a further effect was produced. A light coloured butterfly was projected by means of one of the small lanterns, and caused to hover round the flowers as if undecided which to select, and occasionally settling upon one for a moment and then resuming its first movements.

This was not accomplished by a mechanical butterfly, but by moving the whole lantern, as it hung upon the body of the operator. Presently another butterfly sailed in at the other side, and went through the same motions, and finally came the most natural effect of all, and which never failed to elicit the warmest approval.

Both the insects flew close together, and gyrated round each other just as we see them do on a fine summer day, and at last, separating, fluttered off the screen in different directions. It will be seen at once that this most beautiful effect could not be worked by stationary lanterns.

A short space back I mentioned the name of Dr. Morton. He threw a picture upon a screen forty feet square, in which the spectators appeared to be looking right up the centre of a straight railway tunnel, in the extreme end of which appeared the front view of a railway engine and train, but very small, on account of the distance. As they watched, the train approached gradually nearer, growing larger every moment, until at last it appeared as if about to rush amongst the audience, when a shrill whistle was heard. The whole tunnel and train changed at once to a grotto under the sea, strewn with seaweed and shells, and with the sea nymph, whose abode it was supposed to be, floating gracefully through the transparent waters.

In this case the picture representing the tunnel was thrown on to the screen from a lantern placed on a platform at the back of the stage, the slide showing the engine being in the lantern on wheels. This being brought close to the screen, the train appeared small, and, consequently, distant, but as the lantern was wheeled further from the screen the effect appeared to approach the observers until the whistle sounded, when both slide and effect were suddenly dissolved into the second pair, showing the grotto and nymph.

A very simple dissolving effect needing no special lanterns was called "The Path of Glory leads but to the Grave," and represented the grave of Napoleon at St. Helena, over which the shade of the Emperor appeared. This effect, I may mention, was also painted as a scenic effect for the late Polytechnic Institution, where the apparition of the Emperor was introduced by means of the ghost illusion.

In Mr. Childe's entertainment he had a picture representing Britannia seated with her arm resting on a gold frame, the lion crouching at her feet. In the centre of the frame portraits of distinguished persons, and any celebrities who were attracting public attention at the time, were shown, amongst others, Wellington, Nelson, Jenny Lind, and a portrait of the young Prince of Wales in midshipman's uniform.

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* Dr. Henry Morton, "Cassier's Magazine," New York.

"The Cave of Despair" was represented by a dark cave scene, closed in on all sides by rugged rocks, which were made to take the form of weird faces. In the foreground the body of a man, lying face downwards in the abandonment of utter despair, was to be seen, and from one of the movable lanterns the demon of despair was thrown on. This figure had large wings, which kept moving, and fierce rolling eyes. The demon was of large size, and his wings reached almost across the picture. During the exhibition of this scene various grotesque heads, some with wings attached, floated about in the air, and death's heads also lent a pleasing variety to the scene. All these effects being made to advance and retire, as well as to move horizontally and vertically, could only be used on the Phantasmagoria principle; fixed lanterns alone would not have been sufficient.

A very pretty effect was known as the "Temple of Love," with the temple, a garden, and pool of water. Gold and silver fish were seen swimming about in the pool, while swans floated on the surface, the effect of the fish being especially ingenious, as some of them darted forward, and, suddenly turning, returned to their former position.

In the garden stood a target, having a heart in place of a bull's eye, and, Cupid appearing from behind a bush, fired an arrow which was seen to pierce the heart. The effect of Cupid was produced by a mechanical slide now in the possession of Mr. W. R. Hill, and which was fully described, with working drawings, in the Optical Magic Lantern Journal for August, 1893.

The most impressive Phantasmagoria effect ever produced was also first exhibited in Mr. Childe's entertainment, and bore no definite name, but the main picture, which at the Polytechnic was thrown on from the front lanterns, presented a country church, with the churchyard in the foreground, in the centre of which stood a high monumental tomb surmounted by a sarcophagus. It was moonlight, and the hands of the clock in the church tower pointed to the hour of midnight, which was sounded on a deep toned gong. At the last stroke of twelve the silvery moon turned blood colour, and from the tombs arose skeletons and shrouded figures. To the accompaniment of tremolo chords of a weird character (which continued all through the scene) the lid of the sarcophagus on the centre monument commenced to rise, as if hinged at one side, and from the interior the figure of a skeleton appeared, pushing up the lid with its bony arm.

At this point a solitary skeleton was seen at the far end of the pathway which led down from the back to the front of the picture, and commenced walking towards the audience. This was the celebrated walking skeleton which was explained, with diagrams, at page 123, vol. iv., of the Optical Magic Lantern Journal. It was invented by Mr. W. R. Hill, who personally exhibited it at the late Polytechnic Institution in 1849 (as shown in our sketch), and as this fact is of importance to those interested in the past history of lantern work, I communicated with Mr. Hill on the subject, and he informs me that my facts are perfectly correct. When these things were being exhibited there appears to have been considerable friction between Mr. Childe and some of the authorities at the Polytechnic, as the latter gentlemen wished to remain behind the scenes during the performance, but, many of the effects then being in the nature of secrets, Mr. Childe always resolutely refused to commence until the stage was cleared of all but his own assistants. There are many very beautiful and curious effects which have been produced from time to time which I have not space to even mention now, but I trust that enough has been said to create an interest in the minds of those to whom many of these things are strange. The Phantasmagoria can be easily arranged at home, and a vast amount of amusement afforded with comparatively easy working.

—:o:—

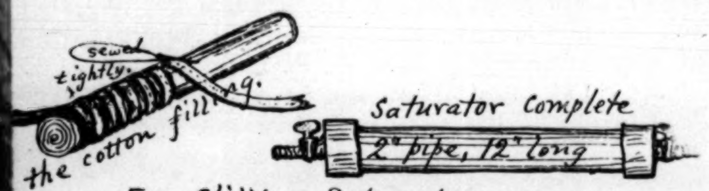
A Four Shilling Saturator.

By Rev. W. H. Young, Ph.D.

I will briefly describe the saturator I am using. Get 12 inches of 2 inch steam pipe, threaded on both ends, and fit a cap on each end, so as to screw up tight against ends of pipe. Two cocks or "taps" that will hold rubber tubing must be screwed into holes drilled in center of the "caps." About 1 yard of heavy canton flannel or swan's down is cut an inch or two wider than the saturator is long, say 14 inches, laid on a table, and tightly rolled into a cylinder. A small but stiff wire will start this rolling process properly.

This cylinder should be about $\frac{3}{16}$ of an inch, or four thicknesses of the cotton less in diameter than the size of the piece of pipe, and the outer edge should be stitched so that it does not unroll. Strips of the swan's down must be cut $\frac{3}{4}$ of an inch wide and several yards long, and two thicknesses of these should be stitched in a machine, one over the other.

Take this double thick fan-edge-like strip, fasten its end to one end of the cotton cylinder, and then wrap it spirally, as shown in the cut, and very tightly, leaving a space about $\frac{1}{4}$ or $\frac{3}{8}$ of an inch to form a spiral passage for gas; stitch this helical strip so firmly that no gas can pass beneath, but see that it follows the spiral passage.



Four Shilling Saturator.

The inside of your steam pipe must now be smoothed, by means of a big swab, with oil and coarse emery or sand. Then draw the cotton cylinder, as completed, carefully through, and cut off the protruding ends with a keen blade. Screw on the two caps with their cocks attached, and your saturator is complete. It may cost less than 4s. in England, because everything is dearer here.

You need never have to open it again if you employ the best gasoline, which is anhydrous; but ether deposits water, which must be dried out occasionally.

Pour gasoline, by means of funnel and rubber tube, through the saturator until it runs very freely from the other end. Then invert it until it comes off only in slow drops. It will then be charged for about four hours steady work.

It is connected like all saturators by a T piece, so that oxygen passes through it into the hydrogen side of a mixed jet. Rest it horizontally in any convenient place near the lantern; open both of its cocks, and regulate at the jet.

For a single lantern the dimensions might well be reduced. Mine is somewhat heavy and unsightly, but its efficiency cannot be excelled, while its cheapness suits all pockets.

Colouring Lantern Slides.—No. 2.

(*Continued from page* 187.)

The pale tints of intense colour, such as blue and black, both magilp and mastic may be added. The exact proportion will depend on the oiliness of the colour, and can only be found out by repeated trials of the mixture.

Half the battle will be won when the colour is prepared in the condition best suited for dabbing; and if the varnish colours supplied by the writer are used, it will only be necessary to put a drop of the paint from the bottle on the palette, touch the drop with the finger-tip, and commence dabbing forthwith, without troubling about any mediums. If very pale tints are wanted, a little special varnish may be added; but this is rarely required.

Skies.—The colouring of skies in lantern slides is, perhaps, the most difficult part of the work, as it is necessary to use great care to avoid spottiness and dust. Before commencing to dab we may examine the surface of the photograph to see if it be smooth and free from scratches. In the case of a gelatine transparency the surface may be gently rubbed over with a piece of linen moistened with methylated spirit to remove any dust that may have adhered to the gelatine during the drying; any parts of the picture which seem too dark and opaque may be reduced and lightened at the same time by continuing the rubbing on those places. When the gelatine surface is perfectly smooth and even, we may apply the varnish colour direct on the film; but if there are scratches, a coat of spirit varnish may be applied by flowing it over the warmed plate; this varnish causes the scratches to be nearly invisible, whereas, if they were filled with paint they would form unsightly blemishes. Sometimes it is necessary to scrape off the sky of a photograph on account of defects, which could not well be disguised in the colouring. A sharp penknife is useful for this work—it should be applied with care on the horizon, or around any objects, such as buildings, which may project upon the sky. After the scraping the glass should be spirit-varnished to cover up the ridges left by the knife, and produce a surface approximately flat. Spirit varnishes vary in composition; some containing substances soluble in turpentine, such as Canada balsam, resin, and mastic; these are useless for slides, as it would be very difficult to dab upon such a basis owing to it becoming soft and sticky. There are good varnishes in the market composed mainly of seedlac and sandarac dissolved in spirits, which are suitable for slides.

Sometimes the sky of a photograph is not exactly defective, but is simply too dark to admit of a bright sky being painted upon it. In such cases we may frequently obtain excellent twilight and evening effects by applying a little colour to the dark ground and afterwards cutting out some high lights with the penknife to represent the moon or stars, while other lights may be scratched in the windows of houses and tinted with gamboge and rose madder.

Clouds.—We have previously described how a plain blue sky is painted; the colour is applied by dabbing, and made as even as possible, allowing the colour to spread beyond the boundaries of the sky space; when the stippling is finished the surplus paint may be removed by wiping it off with a stump, moistened with turpentine or maglip. A few small cumulus clouds made be introduced with good effect by wiping away the colour in parts with a bit of washleather stretched over a small chisel-pointed stick. The upper edge of the clouds, and the side facing the supposed position of the sun, should be well defined, while the lower portions may be softened into the sky tint by a little dabbing. A purple grey tint—somewhat darker than the sky—may be put in at the base of large cumulus clouds; but in small white clouds it is not usually required.

Cirrus clouds are light and fleecy, floating high in the air in fine weather; they may be represented by lightly touching the wet paint with a corner of the washleather, or with the tip of a dry brush, so as to remove the colour in an irregular manner.

Stratus clouds lie in long streaks, usually more or less parallel. When not horizontal they sometimes appear in perspective, all the lines pointing towards one particular part of the horizon, which is the point of sight; the lowest streaks being nearly horizontal, the upper ones sloping the most. There are several kinds of stratus clouds, such as cumulo-strato, cirro-stratus, &c. They are painted in a manner similar to the cumulus and cirrus clouds.

Nimbus, or rain clouds, are dark blue or purple masses darker than the sky tint. There are two ways of painting them. One is to put in the clouds with water-colour previous to dabbing in varnish colour; the other is to dab the sky tint first, and then allow it to become thoroughly hard and dry, afterwards putting in the clouds with the brush. Either method will give good results, but the latter is the best if time be not an object.

Sunsets offer a wide field to the colourist, and are frequently represented in lantern slides owing to the brilliant effects obtainable with them. The simplest evening effect is to put in a pale blue sky at the zenith, and a warm tint —generally orange—at the horizon, the two being blended together into a grey at the line of junction by dabbing, the shadows of the foreground being made of a purple tone.

When the atmosphere is hazy the setting sun may be of a bright golden colour on a rich orange sky, which becomes darker and colder as the distance from the sun increases, until it becomes merged into the blue or purple of the zenith. The clouds over this sun would have brilliant golden edges on the under side facing the sun, while the upper portions would be dark grey or purple. Any near objects, such as trees or buildings, standing before such a sky, would appear almost black by contrast with the bright light.

To paint the sky we may begin by dabbing an even tint, pale blue or purple, at the zenith, changing gradually into bright orange, about the position where the sun is to be. The light clouds may be carefully picked out with the washleather, after which the slide should be well dried. A circle is next scratched near the horizon for the sun, and tinted with yellow. The orange tint about the sun may be deepened by applying more colour with the brush, and the golden clouds may be tinted at the same time. A purple grey tint may be brushed on the dark portions of the clouds, and also on the horizon under the sun, if not very distant. A little black may be required on trees and the like standing before the sky, the best way of representing a luminous sky being to contrast it with some objects in deep shade.

Any dust specks which may be visible should be picked off with the sharpe point of a penknife, preferably when the colour is dry. If there be still water in the picture, it will reflect the colours of the sky precisely like a mirror; but when the water surface is ruffled the colours will be broken up and intermixed, while in some places the reflected tint will be that of the zenith. When the slide appears satisfactory to the eye, it may be tested in the lantern, as the appearance on the screen is the chief consideration. This testing should be done, if possible, by limelight, the strong yellow tint of oil-light rendering it difficult to judge the colours correctly. Probably some little defects will become visible, requiring further touches of colour; and perhaps there may be some dark patches, indicating want of transparency, which can generally be cured by giving the slide a thin coat of mastic varnish at these places.

Effects.—This title includes slides which are exhibited in pairs, or in sets of three, at the same time, by two or three lanterns, in order to produce pictorial displays which could not be shown by a single lantern. Some persons affect to despise the illusions so obtained, calling them childish and out of date. Indeed, one well-known dealer advertises a single lantern as "The Perfect Optical Lantern," although it is alike incapable of showing effects and of washing clothes. It seems to the writer that it is only the half of a perfect lantern, though it probably is perfect as a single. For a lecturer who works his own lantern, and relies more upon his eloquence to please the audience than on the beauty of the illustrations, a single lantern is doubtless the best instrument, being simple to work, and leaving him more at leisure to think of the subject of his discourse; but when the lecturer has a competent operator to assist him the case stands on a different footing.

There is no question that coloured slides of good quality—if their enlarged images are viewed at a proper distance in proportion to their size—are more interesting to the general public than a long run of uncoloured pictures. And there is no question that a few dioramic illusions, also of good quality, are equally pleasing to the onlookers, for the bulk of whom they probably have the attraction of novelty. A joke in a dry lecture comes like an oasis in the desert; a good lantern effect in a course of ordinary views is equally welcome.

The modern system of producing the limelight by means of compressed oxygen and a saturator is not, perhaps, so well adapted for use with a dissolving tap, especially in frosty weather, as the older method of using oxygen and coal-gas in gas-bags; the safest plan at present being to dispense with the dissolving tap, and using a couple of Y joints to keep both lights burning all the time; but as the increased consumption of oxygen is counterbalanced by the saving in coal-gas, and as benzoline is cheap and gives a better light than coal-gas, and is safe from "pops," if the jets are provided with pumice-packed mixing-chambers, it may be affirmed that, on the whole, dissolving views are as easy to produce now as formerly.

Providence has furnished us with two eyes, in order that we may enjoy the "effects" of stereoscopic vision, ability to estimate distances, and increased colour perception; with two feet, to produce the effect of walking; with two hands, to produce effects too numerous to mention. So that it is surely not childish to use two lanterns to produce effects of dissolving views and rolling curtains; of the rising moon and the setting sun; of the flashing aurora borealis and the evanescent rainbow; of goblins rising from the magician's cauldron; of dancing skeletons and gliding ghosts; of hovering angels and visions in the air; of illuminated buildings and sunlit clouds; of the fairy fountain and rippling waters; of the gentle fall of snow, and the lightning's quick flash; and countless others, some invented, but far more yet to be invented.

The highest skill of the transparency artist is brought out in designing and painting the slides which produce such illusions; some are comparatively easy to paint, some are difficult, and others require special frames and mechanical arrangements to assist in their production.

Moonlight Scenes are frequently very effective. If the photograph has been taken against the sun, so that the cast shadows incline towards the spectator, the moon may be included in the picture; but when there are conspicuous shadows inclining to the right or left, it will be better to omit the moon, and to put in a few clouds or stars instead. There are many pretty moonlight slides in existence in which the shadows are evidently not cast by the moon; or if they are, they do not fall on the side opposite the light. Such phenomena are doubtless interesting; but not being met with in Nature, it is, perhaps, wise to avoid them in our pictures. In the case of photographs taken in diffused light, we may put the moon anywhere, and paint in the cast shadows by hand in the proper positions.

A moonlight sky may be represented in various ways. Just after sunset, the sky is frequently of a rich blue colour, which may be imitated by a deep tint of pure Prussian blue. This rich colour does not last very long; it quickly becomes darker in tone, until it changes to the sombre indigo of night, which may be represented by a mixture of Prussian blue and ivory black; or if a greenish tint be desired, by a mixture of blue with burnt umber. It may be observed that the sky blue of day is a purple or ultramarine blue; but the sky blue of night is a greenish blue.

An effective sky is that of a late sunset, when the sun is well below the horizon, leaving a glow of light with a few bright streaks of cloud of an orange colour on the horizon, the rest of the sky being of a darker and bluer tint. If the glow is on one side of a picture, the portion of the sky farthest from it will be the darkest, and here a crescent moon may be put; this owes its light to the sun, and, therefore, the rounded side will face the light, the horns being turned upwards and away from the sun. The crescent should be thin, as such a sky is only seen when the moon is nearly "new." A full moon at sunset is always a long way from the place where the sun sets; so that it could not well be included in the same picture.

When two lanterns are used, we can secure a more realistic moonlight effect by painting the view as a daylight or twilight scene; and then, with a duplicate photograph, painting a sky with an intense blue, and clouds with opaque black; also covering with black all the rest of the picture, except where high lights are. At night, for example, the windows of houses, and perhaps a doorway or two, church clocks, lights in street lamps, and the like, not omitting the moon and stars, if there is much sky space. After this, the slide can be dried; then an etching-needle may sometimes be used. This is a dangerous tool, and should be applied with extreme care, so that the etched lines are made extremely fine, and free from torn edges. The high lights may be tinted with suitable colours —a very pale yellow for the moon, and deeper yellow and orange tints for the windows, etc.

When exhibited in the lantern, the day view is shown first on the screen with full brilliance; a pale orange or red glass is slowly pushed over the front lens to give a sunset effect, next a piece of pale blue glass follows the red, so that the picture becomes blue; then a bit of perforated zinc is slowly passed over the blue glass to reduce the light. The second lantern is now ready with a plate of tin behind or in front of the slide, to temporarily cut off the light from the screen. On slowly withdrawing this plate, the windows of the houses, etc., will appear to light up one after another. Such an effect requires two or three minutes to show properly, and the lecturer should not be in too great a hurry for the next picture, otherwise some of the romance of the scene will disappear.

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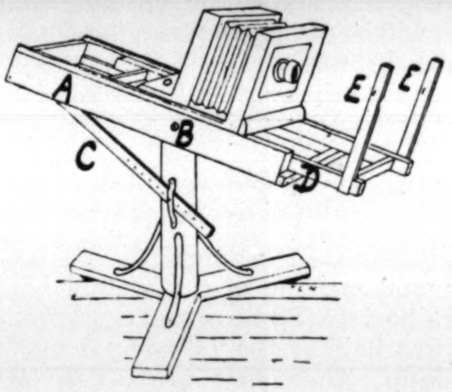
A Handy Copying Stand.*

By Thomas C. Harris, Rayleigh, N.C., U.S.A.

The subjoined sketch shows an apparatus designed and built by the writer for his own use, and, since it serves so good a purpose, it is hereby offered to any of the craft who may choose to build it.

The construction is so clearly shown as to need but little explanation.

The central post rests on three feet, on casters, as shown. It is firmly braced in an upright position, by the iron rods or wooden stays. Across the top of the post is a strong cross-piece (not shown), like the top of a capital T. This cross-piece is just long enough to go between the sides of the main frame (A), and is pivoted to it by screws (B), passing through the side rails and into the cross. Two screws are needed —one on each side, and they should be large and strong. The main frame, camera and all, rests on these screws and oscillates up or down, being held in position by the brace (C). The main frame (A) should be strong and stiff—about four feet long—with an extra long bellows camera attached to it. Inside the main frame is a second frame (D), which slides in and out, on cleats nailed to the main frame. This second frame carries, at its outer end, two uprights (E), at right angles to it and truly parallel to the point of the camera. The uprights are to support the copying board, to which is attached the picture to be copied.



This apparatus may be rolled about, to get the best light, or inclined up or down, at will. The operator may slide the inside frame and copying board in or out, and so get the desired size of image on the ground glass, without moving his head from beneath the focussing cloth. Distance marks may be made on the sliding frame, to show at a glance where it should be placed to make a reduction or enlargement of a given ratio. It is essentially convenient for transparencies. In such work I use (instead of the copying board) a board with a hole in it, in which kits fit. The negative is placed in the kits and the apparatus pointed to the sky, or a mirror, to reflect the light from the sky. The space between the camera front and the board is covered with a dark cloth, simply thrown over it, and all the light which reaches the lens comes through the negative. A good kerosene lamp, for night work, does very well.

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*Photo-Beacon.

In some cases and situations the light of the sun may be turned on the copy by a hand mirror. I have so copied large maps by reflected sunlight, moved rapidly over its surface with a small mirror.

An apparatus of this sort, to a man who has much copying to do, though not a thing of beauty, will be "a joy for ever," and will greatly facilitate the work.

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Reports, etc.

By P.

The annual meeting of the Mutual Admiration Lantern Society (Bombastes Triple, Esq., in the chair) was held at the "Gasbag Arms," on the usual date. There were present the secretary and treasurer, several of those newly-joined members who had not attended a former meeting, together with a few friends and admirers of the chairman. We regret that want of space prevents us from giving a verbatim report of the speeches, but the recently established rule permitting every member to speak on any subject as often as he likes rather tended to lengthen the proceedings.

A latish start was made, owing to the non-arrival of the chairman, and at one time it appeared as though the meeting would fall through; but on its becoming known that Mr. Triple's absence was due to the fact that his name had not been printed on the notices announcing the meeting in large enough type, a deputation of members went round to Saturator Villa, and by representing to him that the printer should be made to apologise Mr. Triple was induced to attend.

The chairman in his opening remarks expressed his gratification at the welcome they had offered him, and stated that he felt sure that he should continue to deserve their good opinion. (Hear, hear.) He felt his time might be better employed—(Yes, no)—but still, once a year he thought it was his duty to descend to their level, and to do his best to enlighten and amuse them. With this object in view, he would now proceed to give them a few brief details of how he had first become a lanternist. Mr. Triple then gave a most interesting account of his career, and having spoken for an hour and three quarters, the chairman then sat down, and the secretary was awaked, and requested to read the minutes of the last meeting.

The hon. sec. said: Mr. Chairman, and gentlemen, at the Christmas meeting last year, the following rules were proposed and carried:—

"That ladies be admitted as members."

The society would be pleased to learn that the new rule had met with universal approval, and that as a result no less than three ladies had joined. Two of these new members had since resigned. It appeared that they had removed from the immediate neighbourhood, and that the train service from Hanwell was not convenient, but still they had to-night the pleasure of the society of Miss Ether Mahogany Triple, and he (the sec.) hoped that she might be prevailed upon to give them a little music later on in the evening. (At this point Miss Triple coyly hid a ream or two of music under her chair, and said that the secretary "was a nasty old thing for suggesting it.") Continuing his remarks, the worthy secretary now called attention to the following resolution, proposed by the chairman, and agreed to *nem. con.* at the last meeting:—

"That gas be laid on to the meeting room."

This resolution, he regretted, had not been carried out owing to some misunderstanding. When applied to on the subject, the landlord had said, "that there was gas enough about the society as it was." He (the secretary) maintained there was a want of respect amounting almost to rudeness in this remark. He also wished to point out that there had been considerable difficulty in persuading the landlord to display one of the placards giving notice of this meeting in the front bar window. He had, after some trouble, obtained this privilege, but it was most annoying to find that the landlord had hung a large card immediately below the society's announcement, notifying that

OUR GOOSE CLUB
HAS
COMMENCED.

The proximity of this notice might be accidental but he rather thought it was intentional. The secretary said his next duty would be to read the list of donations to the society's library during the last year. They were as follows:—

Mr. Triple, a portrait of himself.

Mr. Brown, an opaque screen, and a set of four slides illustrating "his annual bath" (life models).

Mr. Jones, two back numbers of the *Millbank Gazette*, containing an account of his lectures on "The abstract divisibility of the non-existent potential."

Mr. Robinson, twenty slides (various), and a portrait of himself.

The next matter to be dealt with was the arrangements for the coming season. The hon. sec. proposed giving a number of lectures to the society himself. He said he thought that his turn had fairly come, and that the society could not fail to be benefited by hearing something a little more high-class than they hitherto had had. He would therefore set before them some of the subjects with which he intended to deal.

The chairman, interposing, said that he thought that the members present would be quite willing to take the secretary's synopsis as read, and that therefore he would now proceed with the main business of the evening—his newly-invented saturator. The secretary, in reply, said that he begged to hand in his resignation (which was accepted), but before giving up the documents, etc., to his successor, he felt it his duty to ask the chairman what had become of the box of the club lantern. He (the sec.) had no desire to say anything unpleasant, but all he (the sec.) knew was that the box was missing, and that, strangely enough, the new ottoman at Saturator Villa was just about the same size and shape. Art muslin they knew was cheap, and would cover any amount of the club's property, but he——

The chairman ruled the remarks of the late hon. sec. as irrelevant to the subject, and proposed his brother-in-law Mr. Broadgrin as the new secretary. This was seconded by Master Pamphengos Stocks Optimus Triple, and agreed *nem. con.*

Mr. Triple said he would read them the report of his new saturator. Mr. Broadgrin said he was under the impression that everybody in the neighbourhood had *heard* the report, and that he believed that some of the windows of the adjoining houses had not been mended yet.

The chairman, continuing said that the fault of most saturators was that they were not constructed of suitable materials. Now the pattern he had the pleasure of showing them this evening was made on a far more rational plan. The body, as they could see for themselves, was formed of an empty condensed milk tin, and this was the real secret of the apparatus. He had tried all kinds of tins. One of his earlier patterns, made with a potted lobster tin, gave almost as good a light; but operators complained of indigestion after using it—so he had given it up. He had experimented with every kind of tin, but since he had discovered his new theory of affinity, he had rejected them all in favour of condensed milk. First of all, there was its natural relationship with the condenser, as also with the lime, because, of course, lime is known to be a form of chalk, and chalk—well, everybody knew the relationship between chalk and milk. However, he would say no more about its merits, but would light up, and then the members could judge for themselves; and in the meantime, during his preparations, his little girl would sing them something. Miss Triple, after a little persuasion sang "A wet sheet and a glowing lime" (words by B. Triple, Esq.), and as an encore, that striking air, "Popgo esthesa tu rata," from the opera of "Ethoxo."

Having charged the saturator, Mr. Triple next proceeded to light up.

(*To be continued*).

[We prefer not to have the continuation.—Ed.]

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The Lanternist's Den.—XVIII.

By C. E. Rendle.

TO MAKE A LECTURER'S SINGLE LANTERN.

Continued from page 159.

Assuming that the wood body has been put together, the doors mounted, and the whole hinged to the baseboard, attention is next turned to the lining.

On page 5, Vol. V., of The Optical Magic Lantern Journal, some useful particulars will be found as to the manipulation of the metal. The directions for marking and cutting out also will exactly suit for our present requirements. There it will be observed all details of measurement are given, so it will be an extremely easy task to take a sheet of Russian charcoaled iron, which is the metal for the purpose, and for the reader to run his rule through the inside of the woodwork and mark his sheet of iron accordingly. Don't forget, however, in doing so, that an air space is required, say $\frac{3}{8}$ in. between the wood and the metal, and allowance for this must be made in the marking off. An extra piece will have to be cut and fixed to the inside of door at back. This can be left perfectly flat, short lengths of brass tube being passed on the screws that secure it to the wood. As it has not been considered advantageous in this case to fit the bottom into the lining as advised in former articles, I will speak of that presently. The jet shelf is removable, so we'll proceed briefly to discuss it. Cut two pieces of iron 1 in. wide and 5½ in long. One inch from each end of these bend as shown at AA, Fig. 6. The invertion should not be more than $\frac{1}{16}$ in. These bent strips are so riveted to the inside of lining at back and front in. a central position so that the edges at the bottom are flush.

The dotted line, Fig. 6, represents the lining. The jet shelf must next be made, the ends of which are to fit into these slots. Particulars of shelves will be found on page 7, Vol. V., Fig. XVI. but the measurements mentioned there may disregarded, for be it remembered we are here treating a larger sized lantern. As stated, the shelf is to be made to fit into the slots above described, so that it can be removed without difficulty.

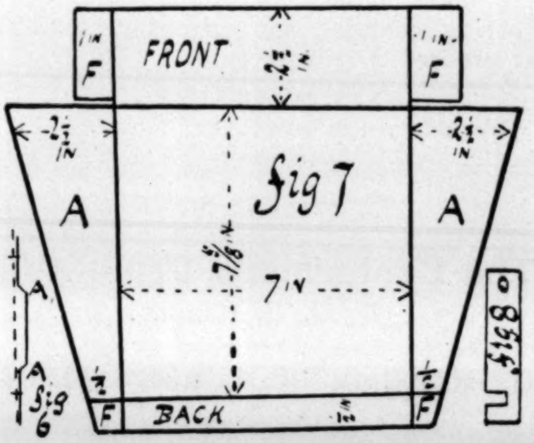

Fig. VII. is a plan diagram of bottom, and is fixed to the baseboard by means of four brass screws, with collets, as before, between wood and metal. If this is properly fitted the front of the lantern can be raised a couple of inches without touching its lining, and the slanting sides of bottom are so formed to meet the angle the lantern takes on plinth, and so exclude the light.

Six or seven ½ in. holes can be made down centre. After cutting them out, their edges must be hammered down with a small flat-faced hammer on a smooth stake. It may be pointed out that the metal is to be cut through the corner lines to DDDD, or, as it were, to the bend. Four $\frac{3}{16}$ in. holes (E) are punched for screwing it to the baseboard.

In proceeding to bend up the sides and ends to right angles, take sides first (AA). It will be found an easy matter to screw side into bench vice, commencing at broad end D and working down to narrow end (D), the line on the metal to run level with the top of vice jaws. Bend down carefully with hand, and finish with small hammer. After the two sides then the front (B) should be bent up in like manner, and lastly the back (C). The overlaps (FFFF) are then laid down flat to sides, and when perfectly square at each corner must be riveted with a brass or copper rivet. Judgment alone can be the guide for fixing this piece of metal work to the plinth, which, as before mentioned, is done with brass screws. In fitting up a lantern, to the uninitiated it is advisable to screw or temporarily fix the respective parts in their several places, so that they can easily be removed. By so doing the worker can detect any faults or bad fittings, which can more readily be altered than at a later stage. Turning attention to the hood, it is necessary to ask ourselves a question or so before deciding the form this should take. If the lantern is to be used as a single, and that with the oxy-hydrogen illuminant, or say a "Saturator," then a hood and arrangement as described on page 7, Vol. V., is best, but if a lamp, or the incandescent gas burner is to be occasionally inserted, then a removable rose top on a dome is recommended. And again, when used in conjunction with the biunial, the hood, belonging to the latter is used.

Explanations have already been given as to door linings in a former paper, but as it has been suggested above that the right hand door may be used to throw light on to the text of the lecture, in which case side shields will have to be provided to help condense the rays of light and so concentrate them to one point. This is easily got over in two ways, firstly, instead of cutting the lining to fit door in the ordinary way, mark the sizes of the square on a piece of iron, and again on each side mark out an addition at the angle wanted when door would be open. Now if this angle piece is bent up square to the line on either side, the door lining and shields are in one piece, and when nicely and smoothly fitted answers capitally. Secondly, should the side of lantern only be required now and again, then line door in usual way, and fit shields on each side from sheet tin. When these two sides are in position, that is to say, resting in rabbets of door, solder a strip of tin at top and bottom; by this means they are held together and can be removed and replaced easily. To finish they will require a coat or two of dead black.

On page 221, Vol. V., Fig. XXX. shows the kind of slotted arm pieces that are required on each side of wood body for raising or lowering the lantern from its plinth. By looking at the lining, as it is positioned in the lantern, it will be seen to rest some ½ in. below top of woodwork. Remove the pins from the hinges of bi-unial, and lift body from baseboard. To do this, take a small steel punch, rather less in size than pin in the hinge. Place one end—which is flat—against end of pin and slightly tap with hammer, this will send it through sufficiently far to enable it to be gripped with plyers and so withdrawn. Now discard these pins and make in their stead one long one that will go through both hinges, and if a ring is turned from the wire at one end it will be found convenient to take hold of, and so attach or detach the body from plinth at will.

The baseboard then has been removed in the manner indicated from the bi-unial, and the iron bottom taken out. The body will now drop into the single to a depth of ½ in. and rest on the iron lining. Four hooked struts and eyes are to be made and fitted, Fig. VIII., two on each side, whilst the lanterns are in this position, the hooked parts fixed to the double body and the eyes to the single. The eye pieces are secured on plates 1 in. long, and width exactly same as top edge of wood. These plates can be let into wood by cutting away with a sharp chisel, afterwards fixing with a couple of screws. The hooks when not in use can lay idly on baseboard, or, if preferred, small plug screwed sockets are let into the lantern body flush with the surface and thumbscrews fitted, they can thus be removed when not wanted. The former plan is first recommended, there being no loose parts to look after. Many of the foregoing remarks apply only to those whose intention it is to use the two lanterns conjointly.

The bi-unial body can now be re-placed to its baseboard. Again, it is complete, but only for a moment. Remove the roller curtain from the stages, and then the entire brass front of the topmost of the two lanterns. This can be achieved in almost as short a space of time as it takes to write it.

The punch previously alluded to must again be brought into use to remove the pin in like manner. Unscrew the nuts from the two corner pillars, when the complete half can then be lifted off. This done, we can return the double lantern to its case, less the brass work, as it will not be wanted again during the job.

On page 90, Vol. V., instruction is given to make the peep-holes. Two of these are wanted, and when finished can be temporarily screwed in their places; and then on page 153 of same vol. the knobs and catches for the doors are explained; of these three will have to be made—one on left-hand door is fixed between peep-hole and rabbet, right hand and back door at the bottom.

Those readers who have the bi-unial, have little or nothing to do in making up the front stages, for as before mentioned, these are but detached from one lantern and attached to the other, and all that is required in this case is four screwed pillars, the same as described on page 166, Vol. V., Fig. XXVI. The same nuts will answer for either lantern, and when these have been fixed in position the lantern is complete. But if the single is to be used coupled to the double, thus forming a triple, or again, if there be no stages at hand to complete the single lantern, then the perfect front will have to be made. Full details are given on pages 154, 155, 165, 166, and 220, Vol. V., of this part of the work, and the only difference to be borne in mind in making it up will be, that if to use both as single and triple, the entire front must work on a hinged plate in the same way as the stages of the bi-unial work from its centre. Great care need be exercised in fitting in exact position, for when the three lanterns are fully equipped, *the centres of the three condensers must be equi-distant*, for if not, the apexes of the objectives will be all awry. The consequences of this would be appalling to operator and audience alike.

One word more in reference to front. The lantern is being made, we'll assume, to be used only as a *Single* lantern. There will be no hinged parts required. The back plate which carries the condenser cell can be screwed down square and rigid, and the curtain block dispensed with, if desired. The latter, however, the writer recommends, as many little dodges can be indulged in wherever a gap occurs.

The lantern is now ready for finishing, and must be taken apart. The mahogany body is to be treated in the polishing process in the manner explained on pages 58, 59, Vol. V. After which the several parts are to be returned to their places, where they are permanently fixed.

The back curtain and fittings are explained on pages 221, Volume V. This is a useful addition, in fact, the lantern is incomplete without it.

To Prepare "Wet" Lantern Slides for Colouring.

THE colouring of lantern slides is becoming very much of a fad. We yet adhere to our preference for the "wet" slide. It gives the best projection on the screen, and that is the spot to judge of a slide. A transparency is not a projection. But some colourists have drifted into using the "dry" slide for their results because they have a difficulty of working colours upon the collodion film. Permit us to lend a helping hand.

To prepare a wet plate lantern slide for colouring, either in water colours or in oils, the following process is simple and easy:—

Cover a quantity of (say half-ounce of Cox's or No. 1 Nelson's) gelatine with cold water; allow it to swell thoroughly, say an hour. Drain off the excess of water by covering the vessel with a thickness of cheese cloth. Do not press the excess of water off, merely drain it and take time. Set the gelatine in another dish containing hot water until it melts; then take it out and stir in alcohol (use photographic 95°) slowly until white follows the addition. This you redissolve by dropping in hot water in the same manner. Filter through two thicknesses of cheese cloth into a wide-mouthed bottle. If too thick to flow when warmed for use, add alcohol and water as before, wet the binder of the slide on its edges, and scrape it off from the glass. Flow the surface of the slide with alcohol, one part; water, two parts; then follow with the gelatine solution twice or more. Dry on a rack, or on nails in the wall—do not use heat. Work carefully, and all things clean. —*Wilson's Photographic Magazine.*

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How a Successful Lantern Lecturer came to Commence Business in New Zealand.

MR. W. H. MATHIESON, before starting from Invercargill, New Zealand, in April, 1893, for a trip round the world, promised the minister of his church that when he returned he would deliver a lecture on his trip in aid of the funds of his church. While on the way he conceived the idea of procuring good views of all the principal places visited. This he did, and also had specially painted "The Charge of the Light Brigade," "Mary Queen of Scots," "The Village Blacksmith," "Sailing," and "Rock of Ages"—all of which he exhibited in connection with the lecture. On his return he fulfilled his promise in St. Paul's Presbyterian Church, Invercargill, on two separate evenings to large audiences, the opinion expressed at the conclusion of each, being that the entertainment all through was one of the very best of its kind ever given in the town.

Subsequently, invitations from country districts flowed in upon Mr. Mathieson, soliciting a visit. He complied with these requests as far as possible, and since has lectured and exhibited at almost every township of any importance throughout Southland and Otago, and everywhere has large and highly-delighted audiences, and ample testimony of public appreciation. In a large number of places the entertainment has been given a second and third time at the urgent request of residents, while in not a few instances individuals attended the entertainment on several occasions, when given at different settlements within their reach, coming over twenty miles or more to be present.

From this beginning Mr. Mathieson has been kept busy giving his lecture, and now he stands in the very foremost ranks as a successful lecturer.

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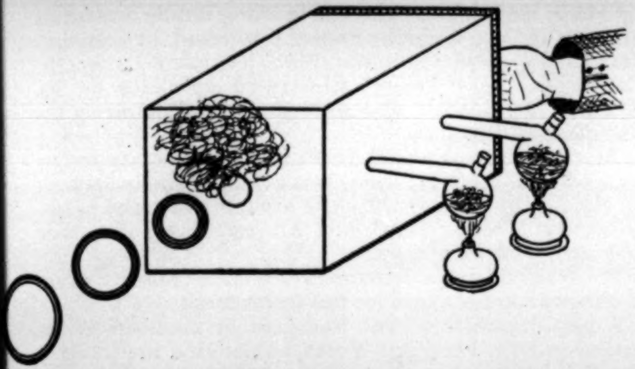
Experiments for the Lantern—"Vortex Rings."

BY E. DREW.

MANY of our readers may have noticed the formation of smoke rings whilst smoking their evening pipe, but the cause of these rings may never have occurred to them, or it may never have occurred to them to investigate the phenomena. It is not the object of this article to enter into any explanation as to the cause of the formation of vortex rings, which is the name these rings of smoke are known by; but for an explanation of the cause of vortex rings, the reader must be referred to some of the well-written explanations given by some of our leading science teachers. The following description will, however, give the reader an idea as to the making of vortex smoke rings by a much surer method than by means of the pipe and mouth; and should the curiosity of the reader be aroused, and lead to the investigation of the causes of this interesting phenomena, the writer will have attained the object desired.

A very good and simple method to produce vortex rings upon a small scale for individual experiment is to obtain an empty cylindrical coffee tin. Remove the lid of the canister, and by means of a circular punch, make a hole centrally in the bottom about one-third of an inch in diameter. Over the open end of the canister stretch a piece of writing paper as tightly as possible, insert into the hole in the tin bottom some smouldering pieces of brown paper, and having generated sufficient smoke in the canister, tap the end centrally with the finger, when the rings will be seen to readily issue from the small hole, and at a speed proportionately to the strength of the tap.



The vortex rings produced in this way are very small, and it would be difficult for a number of persons to witness the phenomena at one time. By employing a larger smoke receptacle, a difficulty will be experienced in obtaining sufficient smoke to fill and necessarily give strength to the rings formed. Recourse has, therefore, to be had to some other means, such as producing fumes of ammonic chloride.

The following is a method in which the fumes of ammonium chloride will allow of vortex rings being made on a large scale and sufficiently large for a number of persons to witness at one time. The apparatus necessary, in place of the cylindrical canister, is a large square wooden box about the size of a tea chest. At the bottom of the box is made a round hole, and at the side opposite a piece of canvas is tightly and neatly secured by means of tacks all round. Two holes are made in the side, and into these two holes is inserted the stem pieces of two small glass retorts, one having a quantity of hydrochloric acid in it, and the other a quantity of ammonia solution, both of which are mostly in possession of amateur photographers and lanternists. The retorts are gently heated by two small spirit lamps, or small Bunsen burners. The vapours given off mix in the box, and produce ammonium chloride as described. By tapping the end, as in the former case, large rings will thus be readily formed. If the experiment is performed in the dark, and the rings are projected into the path of a beam of light from the lantern, they will be more effectively demonstrated.

The accompanying sketch gives a genera view of the latter piece of apparatus described, and will assist the reader to more fully understand the written description.

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Topical Notes.

By The Dreamer.

It is my intention in this page to bring before readers' notice subjects which come under the above title, that is to say, anyone and everyone, anything and everything, which may be of interest—ephemeral or otherwise—to them.

This is a somewhat wide scope, but I do not wish to tie myself down to one subject, or one groove, and so run the risk of being brought to book for wandering from my text.

We all welcomed the decision of the judges in awarding one of the Royal Photographic Society of Great Britain medals to E. Marriage for his lantern slides. From their very nature lantern slides and transparencies are much handicapped when competing against prints, and, therefore, except in a Utopean world, they cannot be expected to attract the attention and recognition they deserve, so that this award is doubly acceptable.

It must not be forgotten either, that a meda has also been awarded to one of our foremost lantern slide producers, in the person of E. G. Lee, and well he deserves the distinction. This makes, I think, his second P.S.G.B. medal. Amongst the other prize winners the names of J. A. Sinclair, F. P. Cembrano and L. C. Bennett are well known, not only for their prints, but also for their lantern slides, so that, altogether, we have cause to be satisfied with the performance of our workers.

On looking through a list of awards of the P.S.G.B. during the last ten years I notice that out of about 150 medals awarded by the judges, only six have been given for lantern slides or transparencies, whilst during the same time, out of eleven medals awarded for "apparatus," only one has fallen to lantern apparatus, *i.e.*

the Stereoscopic Projection Exhibit of Mr. Anderson. Surely some more of the very ingenious lantern apparatus were worthy of the coveted distinction.

WHAT is the Lantern Society doing? I suppose most lantern users have an idea that there is such a society, but where it meets, when it meets, and what it does when it does meet, would be, I am sure, unanswerable questions to the great majority. Cannot something be done to rouse it into life, or is it to degenerate into a dealers' show-room? It has a good meeting room, and I have no doubt its officers are good men, but they require waking up. An energetic go-ahead Lantern Society would be a great success. But is the Lantern Society that?

UNASKED, I should like to point out one or two ways in which the Lantern Society might, in my opinion, be improved.

1.—Reduce the subscription to 5s. per annum.
2.—Send reports of meetings to the Press regularly.
3.—Arrange a series of lectures, demonstrations, and discussions on lantern matters for each session, and let these fixtures be advertised in the Press week by week.
4.—Make the meetings of a rather more sociable tendency.
5.—Provide facilities for members to make and examine slides, etc., provide a dark room and a permanent lantern and screen for use of members.

Possibly, an annual exhibition of lantern slides and transparencies, carefully displayed and lighted, might be included, but it requires careful consideration. There must be in London hundreds who might join such a society, and amongst them there would be no lack of volunteers to read papers, or give demonstrations at the meetings, or to attend and imbibe the wisdom emanating from their more fearless fellow members.

A FRIENDLY controversy as regards the power of rival jets took place recently, and a practical test trial was decided upon. One would have thought the Lantern Society was the only place to settle the matter, and that the executive would have seized the opportunity of providing a good evening's entertainment and instruction for their members. But not so, the battle ground was arranged elsewhere.

THIS little incident may be cited as one of many which afforded the opportunity of a little energy and a little go-aheadedness being shown by the Lantern Society, but apparently it was not forthcoming.

The Lantern Society.

DURING the past session the Lantern Society have had the following meetings (20, Hanover Square, W.):—

One exhibition of slides for members and their friends. Two meetings, at which the slides going to or received from America were shown. One meeting, at which a set of slides illustrating the World's Fair at Chicago were shown. One meeting, at which a selection of the old Polytechnic slides were exhibited in the original lanterns by Mr. J. Hay Taylor; the whole being kindly lent for the purpose by Mr. Wilkie. Papers were read by Commander C. E. Gladstone, on "Old Touraine"; by Mr. Carrington, on "Trees," illustrated by slides by Mr. Evans. Mr. Beckett also showed slides illustrating the Vatican and Pompeii.

At the informal meetings, various pieces of apparatus were shown, amongst them being:—A portable lantern, by Mr. J. Hay Taylor. Electric arc lamps for use in lanterns, by Messrs. Newton. An apparatus for slide making, by Mr. Kapteyu.

Mr. Norton gave a demonstration on the relative values of different illuminants for use in lanterns.

A very interesting visit was paid by members of the society to Brin's Oxygen Works, at the kind invitation of Mr. Murray.

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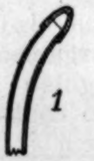
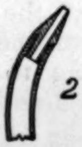
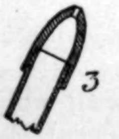
What Causes the Hissing in a Jet?

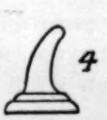
BY A LANTERNIST.

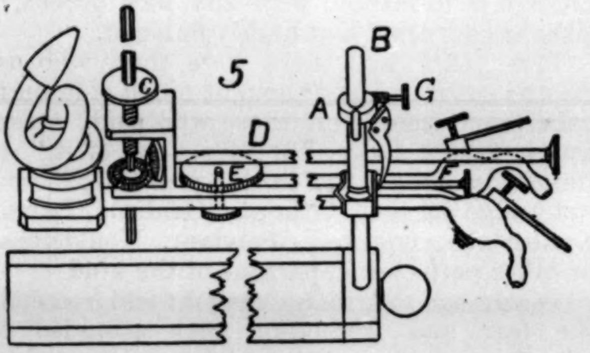
THE above query would be answered by a great many, "because one has too much pressure on"; I will not contradict it, possibly that may be so. A great number of jets made by even eminent makers are sometimes rendered most unsatisfactory by the presence of this nuisance, and in many cases it will be found necessary to turn off the taps, so as to lower the pressure, whilst others indulge in stuffing the mixing chamber with wire or gauze, or placing a quantity of worsted in the same position, and to their disgust find that it only makes matters worse. In using an ether jet the worsted or gauze is burnt away instantly. In nine cases out of ten they have not commenced at the right place, unscrew the nipple and see what sort of joint there is, you will in most cases find that there are some sharp edges against which the gas impinges and thus causes this disagreeable noise. These rough edges are generally to be found at the junction of the nipple and the exit tube of the jet. The rough diagrams shown will give one some idea of the principal errors in construction. In Fig. I. we see possibly one of the worst forms of jet, simply a piece of bent pipe with an oil-can or blow-pipe nipple, this detestable form of jet nearly always hisses most vilely. Although not by any means free from faults, Fig. II. is of a more workmanlike construction, but the serious drawback to this is the backward prolongation within the lumen of the exit tube. The best forms of jet are shown at Figs. III., IV., V. In the first and latter it will be noticed that the nipple is turned to a nicety, in order to receive the screw-tapped supply pipe there are absolutely no sharp edges, and the interior of the nipple gradually diminished until within $\frac{1}{8}$ of an inch of the apex. This portion is of a uniform diameter of about $\frac{1}{24}$ of an inch, as indeed any other calibre that might be found suitable for this particular form of work. However good the performance of these jets, I consider Fig. V. possesses decided advantages, the peculiar S-shape jet of the shape shown ensures perfect mixture of ether, vapour and oxygen. As a rule the nipple and tube are cast solid, then turned hollow and filled with melted lead and carefully bent to the required form. A few moments heating will suffice to melt the lead out again. Should these jets, however, get burnt owing to the peculiarity of their construction, they are somewhat difficult to replace. Fig. IV., known as the inverted funnel form, is another solid cast one, and bent to shape, but does not equal Fig. V. You will notice in this latter sketch I give best part of the jet, pin, tray, etc., which I should like to say a few words about, having found this one of the most useful all-round appliances. The main feature is, after having been approximately fixed in, it can be positioned and accurately centred from the outside without employing costly means to that end. The jet is a well made one in every way, and is made to fit the ordinary trays of lanterns usually supplied by the trade, is fixed in position by a thumb-screw (A), which secures the main tube to the upright of the tray (B), the two gas tubes running on each side of this form the main frame of the jet, and upon these the lime-holder slides (C); this is pushed to and fro by a rod (D), which is carried through to the back, and when at its right distance from the nipple of the jet is secured by a milled clamping-screw (E); the rod before mentioned terminates with a crown wheel, which gears with another crown wheel at the foot of the lime carrying pin. This pin has a square foot working within the crown wheel and is turned by it upon its revolution. The central portion of the lime pin having a worm upon it is thus lowered or raised as occasion requires, the same action also turning the lime when necessary. The tube by which the jet is fastened to the tray is hinged to the back of the frame in both directions, and whilst one milled-headed (F) rod projecting from the back of the lantern serves to tilt it slightly in vertical direction, another (G) swings the jet from right to left, so that with the exception of clamping the lime-holder (C) in position, all movements can be made from the outside of the lantern. A few more words on the taps that are used; they are the ordinary taps that shut off from left to right respectively, but they have a screw down plug in the centre of each, whereby the proper quantities of oxygen and hydrogen can be more accurately adjusted in a most minute manner—they themselves are a preventative against hissing; and getting the most intense light with the minimum of gas, the screw-valve being turned down, the lever-tap can be turned on full, and with one or two turns of the valve one has most perfect control under whatever pressure. I can recommend these to all lantern friends who are troubled with hissing and roaring of their jets.











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Lantern Novelties of 1895.

By Tom A. Whitehead.

It is a bold and presumptuous assertion to say that the lantern is the backbone and sinew of three-fourths of the lectures given in this country; this country! exclaims the reader. Well, friend, let us say Europe, or if that is not satisfying, then alter the reading to any civilised land. The proportion is a big one, you say; that's granted, but not at all wide of the mark.

Take a peep into the past for a moment, not to the records of the Babylonian Tombstones, nor even to the times of Chaucer, or Shakespeare and Bacon; nor even to the first Napoleon, but just to your, or my recollection, say a quarter of a century ago. Twenty-five years is not long, though long enough for a contrast. The days when that splendid fellow, George Dawson, would walk upon the platform buttoned to the throat in that inevitable black velvet waistcoat of his, laying his notes (which were sufficiently *bulky* as to have gone into any ordinary pill box) on the table, and without more ado going straight for his subject, in a way that perhaps no other lecturer so well understood, no matter whether it was the charms of Good Queen Bess, or the fair Ophelia, or the good and bad traits in the character of Oliver Cromwell, he treated them all the same. The subdued and sympathetic voice, the fire and declamation, those flashes of rhetoric all in their proper places, they used to rivet the attention and hold the hearer spellbound.

Again, we were more than amused at the off-hand entry of Henry Vincent; his overcoat and slouched hat were thrown on a chair if there happened to be one vacant, and if not one corner of the platform was good enough. Both hands would go through his hair, but only once, and his toilet or make-up was begun and completed in the very face of his audience, and then would begin an oration, lasting some hour and a half, or an hour and three-quarters, such as only Henry Vincent was capable of. His great mastery of the inflections, and wonderful dramatic force seemed invincible. No wonder then that crowds would flock to hear such men wherever their names appeared.

To day things are different. There are few Dawsons, Vincents, or Max O'Rells among us, but that there are some, nobody can repudiate or deny. Things have changed we've said; so much so that we maintain that if a public be asked to support a lecture, no matter what the subject may be, "The Wonders of the Telescope,' "The Panorama of the Riviera," "The Deep Sea Fisheries," "Paris, yesterday, to-day and to-morrow," "European Chateaus," or "Through the Suez Canal in a Canoe," or such like, they would be more than disappointed at not finding the lantern screen in its wonted position, and be much inclined to walk out.

The lantern is the mainstay of the lecture I repeat, and cannot think that such a query is any longer debatable, the more so, since the chief organs of the world's press tell us so every morning.

Very well then, we accept that. What then? Why, as a body of lecturers it behoves us to keep open the eyes, the ears, the intellect generally, in watching the advancement of the means at our disposal for demonstrating the subject matter.

Prejudice against anything new always existed, and always will exist, but it is gratifying to think that in lantern circles, such prejudice only applies to the rawest of recruits. "Oh, oh!" someone calls out. "How about the saturator up to even Scott's time?"

"Draw it mild!" cries a second. "How about the gas bottle; was there an absence of prejudice in accepting that?"

"Whoa back!" says number three. "Who do you think is going to generate acetylene gas for their own consumption, with its mess, its filthy fumes and its many uncertainties?"

Gentlemen, please, one at the time (ladies, excuse your being left out of the argument); while we're perfectly willing to tighten the reins, we wait with whip in hand to continue the race, and repeat that the amateur is the biasing party. His knowledge as a rule won't allow him to fathom into any new groove, he likes it cut, dried and highly finished.

Five years ago there were those who used Scott's saturator, and thought much of it; on the other hand there were those who said, "take it away, take it away, I'll have none of it," and hundreds of the latter in this year of 1895 would not budge an inch without a Gridiron, Lawson, Timberlake, Optimus, Pendant, Houldershaw, or other perfected apparatus of the kind.

Years, ago too, many readers will remember the fear and trembling that attended the adoption of the gas cylinder, as it replaced slowly but surely the rubber bag. The convenience and safety of the former over the latter is the most convincing proof of its value. Who among us is there that would care to return to the gas bag?

This year we are introduced to the new acetylene gas. This, by the way, is in its very infancy, as many technical points have yet to be threshed out ere its usefulness can become prominent. Before another season, however, we may expect blossom from this new branch of the scientific tree. The writer has much faith in it, in spite of his having had his head nearly blown off the other night, when in conjunction with our able editor, Mr. J. Hay Taylor, we were experimenting with it in the garden of his home in the Hornsey district. This is *entre nous*.

The incandescent gas-light which has been added to the lantern illuminants is welcomed by not a few. Both clean and simple, and well suited for discs of small diameter. For home purposes its convenience will be found a great boon, as it can be attached to any burner.

On my desk in front of me as I write lies a couple of lantern slides, and the complete specification of a flash lamp, the inventor and patentee being Henry A. Keys, of Walthamstow. Mr. Keys claims for his invention a means whereby the lighting or igniting surface covers the largest possible area (consistent with the portability of the lamp, and the usual limited space of a photographer's outfit), in order that a small portion of magnesia powder may be distributed over such area, and so extend the field of intensified light.

The editor will probably have one of these lamps for trial in a few days, and if the test proves as satisfactory as the samples, there can be no doubt that a large demand will be the result when placed upon the market. The two subjects of the slides mentioned above are difficult ones taken by the flash lamp, viz., *Grace before meat*—this is a family of children seated at supper—and *A conservatory stocked with flowers*.

The lights and shadows in each of these slides is so well distributed as to raise a doubt upon the light employed, and I hope at an early date to congratulate Mr. Keys for having given us a lamp that will be of value to any lanternist.

(*To be continued.*)

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On the Development of Lantern Slides.

By Duncan Moore.

The time is rapidly approaching when the Optical Magic Lantern will be taken from its shelf to become a source of amusement and instruction to both the younger as well as those of more mature years. Bad light and wintry weather will put a stop to the greater part of outdoor work, and afford enthusiasts an opportunity for the home occupation in making lantern slides from his choicest negatives.

That there is a vast difference in the quality of lantern slides, no one will deny. Even when made from excellent negatives some will be much better than others. As in printing of other kinds, a good negative can be made to give either a good or bad result, according to the intelligence with which the work is performed.

As there are prints *and* prints, so there are transparencies *and* transparencies. There is the flat slide, without a vestige of sparkle or brilliancy; poor weak slides, with no light and shade to speak of; slides that are masses, black with intense light; slides that look almost as if made of sand; and the rich, soft, smooth, brilliant slide that is a pleasure to look at and elicits applause directly it is thrown on the screen; and yet one and all of these may have been made from exceedingly good negatives.

It goes without saying, that the best negative will make the best slide, other things being equal. At the same time, what may be best for a lantern transparency may not be the best for ordinary printing. In fact, a rather thin negative, full of detail, that really will not make an exceptionally good print on paper, is the kind calculated to make the very best quality of lantern slides; it should be thin and full of detail. The brilliancy is added by judicious exposure and in the development of the transparency.

Unless the original negative possesses printable detail, it is useless expecting to get it on the slide. A dense negative is very unsuitable, for even if detail is there it will be lost in the copying. The kind of developer has a good deal of influence on the matter. Hydrokinone, one perhaps of the most generally used, is not good for this work; the fineness of the resulting image will be much inferior to one developed with carbonate of soda and pyrogallic acid. Ferrous oxalate is another unsuitable developer, although both give excellent negatives for ordinary printing. Ferrous oxalate, especially, produces granular coarse positives.

The popularity of quinol or hydrokinone is on account of its beautifully clear shadows, and until the slides are shown in the lantern they appear all they should be. On the screen a certain harshness becomes at once apparent, and if followed or preceded by one developed by a more suitable developer, the fault is unmistakably evident.

The choice of plates for lantern slides should be regulated by the fineness of the image they will produce. Generally, slow plates are preferable to rapid ones, because the bromide of silicon is in a finer state of division. Most of the specially made lantern plates are very slow, judging from the standard of dry plates for other purposes, excepting those for photomechanical use.

Plates that when moistened show a gas flame seen through them of a yellowish grey are better than if the light transmitted was of a bluish grey. The yellow and red colours seem to be closely associated with silver bromide in a state of fine division, and the blue colour when it is in a coarse form. It does not much matter how the original negative has been developed—the granularity is not transmitted to the copy. This freedom from it is only so important on the positive. The image in all cases should bear examination with a tolerably strong magnifier without showing grain.

The time of exposure has an important influence on the colour, and also the fineness of the image. If the exposure has been too brief, and the development at all forced, the quality of the image is very much deteriorated. But with a fairly long exposure, and a somewhat restrained development, we get a quality and richness of result very charming to see. There are two methods for making transparencies—one by contact, and the other by the aid of the camera. By contact, the slide is produced of the same size as the negative; by the camera the size of the negative is of no importance. We can reduce our whole-plate or 12 by 10 to lantern size with equal facility.

(*To be continued*).

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Patent Intelligence.

The following list, relating to current Patent Applications, is compiled expressly for "The Optical Magic Lantern Journal" by a registered Patent Agent. For further information apply to The Patent Department, "Optical Magic Lantern Journal," 56, Chancery Lane, London, W.C.

No.	RECENT PATENT APPLICATIONS.
19934.	23rd October, 1895. C. A. Burghardt and G. Rigg. Improvements in a process for obtaining oxygen gas.
20539.	31st October, 1895. R. Smith. Improvements in apparatus for use in binding lantern and like slides.
21622.	14th November, 1895. Improvements in valves for cylinders employed in compressing air and other elastic fluids.

RECENTLY-PRINTED SPECIFICATIONS.

Copies of the following specifications may be obtained by remitting 1/- for each specification to The Patent Department, "Optical Magic Lantern Journal," 56, Chancery Lane, London, W.C.

22704 of 1894.	Askew. Optical lantern.
22990 of 1894.	Barber. Photographing, and exhibiting cycloramic views.
918 of 1895.	Clarkson and Sparge. Regulating flow of compressed gases.
16070 of 1895.	Chase. Stereopticon panorama.

Editorial Table.

STEWARD'S CATALOGUE.—A new edition has been issued by Mr. J. H. Steward of 406, Strand. It contains about 130 pages, many of which are devoted to particulars and illustrations of lanterns, jets and other apparatus connected with lantern work. Not only does it include lanterns for ordinary projection, but also styles for scientific and other experiments. A strong feature is the adaptation of the Davenport electric lamp in connection with lanterns, both for picture projection and also for stage illumination. Copious lists of slides are also contained in this catalogue.

THE LANTERN, AND HOW TO USE IT.—By C. Goodwin Norton, London: Hazell, Watson & Viney, Ltd. This 1s. book of the Amateur Photographer's Library, No. 10, contains much that is of interest to lanternists in connection with lamps, gas, cylinders, regulators, and the general manipulation of lanterns. Each subject is dealt with in an interesting and exhaustive manner.

OPTIMUS CATALOGUE.—The new catalogue issued by Messrs. Perkin, Son & Rayment, of 99, Hatton Garden, is a very comprehensive one, as it contains particulars of their lenses, cameras, dark room and flash lamps, and also of their well-known enlarging lanterns. With regard to their lanterns for projection, they have everything to suit the wants of the most fastidious. Then jets, screens, reading lamps, and connections come in for a share, whilst opera glasses and telescopes have due attention. Taken altogether the catalogue is a most complete one.

TAUNT'S READINGS FOR THE LANTERN.—Some excellent humorous stories in verse, well suited for juveniles, have been published by Mr. Taunt of Broad Street, Oxford. They consist of "Hookbeak, the Raven," "Misadventures at Margit," "Oxford Bullingdon Guards," "A Capital Snip for an Ocean Trip," and "The Serenader's Symphony."

ANIMALS YOU KNOW is the title of an interesting reading, descriptive of 83 slides, by Mr. C. Reid, of Winshaw, N.B. It is written in an instructive style.

MESSRS. WEST & SON, of Southsea, have sent us some fine slides of the race at New York between the *Valkyrie* and *Defender*. As announced in a previous issue, we stated that Mr. A. West had taken a trip to the States for the special purpose of taking negatives, every convenience for the same having been placed at his disposal. The slides include *Valkyrie*, the two yachts thirty seconds before the foul, and also five seconds after it, excursion steamers, and *escorting the Defender* after winning the cup. The subjects are very interesting, and the pictures themselves all that could be desired.

INTERNATIONAL ANNUAL OF ANTHONY'S PHOTOGRAPHIC BULLETIN.—The sole agents in England for this annual are Messrs. Percy Lund & Co., Ltd., of Bradford, and Memorial Hall, London. This welcome annual, which has now reached vol. viii., contains, as usual, good and practical articles, besides a host of other information, which forms excellent reading. The illustrations are fine, and are well printed. Doubtless it was a slip of the pen on the part of Mr. F. J. Harrison, the editor, that caused the "Lanternist's Reference Table," which he extracted from our columns, to be inserted on page 347 without acknowledgement, but as he will of course read this, he will see that it does not occur again, as we know that he would not knowingly have done so.

PHOTOGRAMS OF 1895.—This volume is a pictorial and photographic record of the best photographic works of the year, and it certainly is all that is claimed for it. The reproduction of the photographs —beg pardon, in this instance we should have said photograms—is carried out in an excellent manner, whilst the printing of same is quite a work of art. The literary matter is good and easy reading, the paper on which it is printed is of high class, and when one learns that all this can be procured in paper covers for 1s., or cloth for 2s., they will doubtless be anxious to at once send the necessary remittance to the publishers, Dawbarn & Ward, Ltd., of Farringdon-avenue, E.C.

TYLAR'S SPECIALITIES.—Mr. Tylar, of Birmingham, has sent us a bottle of his silver ink, which is useful for putting titles on dark mounts or photographic prints; also a fine celluloid negative of a border for use when making photographic prints as Christmas souvenirs. Also a supply of what he terms profanity preventers, these consist of strong binders for lantern slides, about the adhesive qualities of which there is no doubt.

SLIDE EXCHANGE.—Mr. J. Boyle, jun., 263, Preston New Road, Blackburn, has sent us a set of rules pertaining to a Lantern Slide Exchange Club, of which he is the Hon. Sec. The annual subscription is 2s. 6d., entrance fee 1s., and the total membership is to be thirty. There are, we learn, a few vacancies at present.

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Correspondence.

SQUARE LIMES.

To the Editor.

DEAR SIR,—Mr. Scrimgeour, in your November issue, is wanting a square lime to avoid the flame of the jet curling round the lime. Why should he wait for a square lime? Tom's groove disc limes will meet his requirements. We have been using them for some time in all kinds of halls, large or small, and even at so difficult a place as Highbury Quadrant, where we used them for the Literary Society's lectures, we have found them work well, and they cannot drop even if they are cracked all over. In fact, we have never had to change a lime during an exhibition.

We are, yours faithfully,

HENRY W. NETTLESHIP AND HAROLD ROSE,

Authors of "Prison Life," "Oliver Cromwell," etc.

November, 18th, 1895.

OIL LIGHTS.

To the Editor.

SIR,—As you are interested in common with a great majority of your readers on the subject of oil lighting for magic lanterns, would you please explain the following. I see by your columns that the most powerful tested oil lamp is 109 candle-power. The enclosed cutting I have just received from America says that the Millar patent lamp gives 300 candle-power. I will suppose for argument's sake that we discount that one-third; we still have 200 candle-power—over double the power of any that we read about. Why, Sir, cannot a patent such as the above be used in magic lanterns? Granted that you would require to have a larger lantern body and tank, this could be got over by a little extra cost. This would be as nothing compared to the great benefit conferred on those who use oil in places where it is impossible to get the limelight. I cannot help the thought, Sir, that oil lamps have not kept pace with the lanterns, and that as different lamps constructed on the central draft principal could be invented that would give far more satisfactory results. This subject is of very grave importance to many professionals and amateurs in New Zealand, and judging from the great number of oil lanterns that are annually made in England, would be of great importance to many at home.

Personally, I am prepared to pay handsomely for any oil lamp that will give over 200 tested candle-power. I would ask, Sir, for your powerful assistance in this important subject, and I hope those who have had a life-long experience in lantern making and lighting will give us in your columns the benefit of their experience.

I remain, yours, etc.,

W. H. MATHIESON.

Invercargill, New Zealand.

LANTERN CLUB AT FOREST GATE.

To the Editor.

DEAR SIR,—Being desirous of forming a kind of Lantern Club in this neighbourhood, for the purpose of giving lantern exhibitions for the benefit of charitable institutions, etc., I should be glad to hear from any of your readers who may approve of same, and would be willing to join with me in forming such a club.

Yours truly,

S. L. WILTON.

Longmoor Villa,
158, Romford Road,
Forest Gate, E.

SELF-LIGHTING JETS.

To the Editor.

DEAR SIR,—In the November number "A Lanternist" describes the method of making a self-lighting gas jet. I should like to ask whether the jet referred to is not the same as Duke's patent self-lighting gas burner, which is now being sold by the Duke Patents Company, of which I enclose a prospectus. The drawing given on page 177 of your Journal is precisely like the burner of which I have several in use in my house. If the burners are identical, while I suppose it would be legal for a person to make one for his own use, he might get into serious trouble if he sold one. I should like, therefore, to put your readers on their guard. My own experience of the burner is not altogether satisfactory, its efficiency depends almost entirely on the small piece of platinum wire being in its exact place. I have found it very liable to get bent or shifted, and then it does not get sufficiently hot to light the gas.

And now, Mr. Editor, I am sorry to find from two paragraphs in your "Notes and Queries" that the Lantern Society has incurred your displeasure, and I am the more concerned because I cannot promise amendment in the matter with which you find fault. One of the objects of the Lantern Society is to bring before its members any improvements in the manufacture of lanterns and apparatus and the Council considered it would be a suitable way to open the new session with such an exhibition. They therefore invited the principal makers to send anything new they might have to bring forward. No doubt it would be to the advantage of all lantern makers if they became members of the Society, but the Council are not so illiberal as to exclude non-members from exhibiting. Indeed, Mr. Editor, unless my memory plays me very false, a good deal of the apparatus you have been kind enough to show us at various times has not been made by members. I may add that we have received expressions of appreciation from many of the members who were present on October 14th, and I suppose these must be set against the dissatisfaction of those who have complained to you, who, by the way, you very rightly advise to express their views either to the hon. sec., or at one of the meetings, for the Council always welcomes suggestions from any of its members.

Yours faithfully,
J. J. VEZEY.
Chairman, Lantern Society.
188, Lewisham High-road, S.E.
November 9th, 1895.

[We are always glad to see improvements in the Society, but at the same time we give conscientious answers to correspondents—hence the replies in "Notes and Queries." We have sent your enclosure to the writer of the article, and received the following reply.—Ed.]

To the Editor.

(In answer to Mr. J. J. Vezey)

Dear Sir,—The burners referred to are identical with Duke's Patent. Whilst saying how they are made, the burners sold by myself are Duke's, and I believe anyone can make any patented article for their own use. No serious trouble can come to the seller of the original article.

As to my correspondent's experience with same, I must agree that Duke's are not yet perfect, the platinum wire being too fine. With a slightly coarser wire they are much less liable to shift or bend, as I have found from my own experience, being in use continually for three months at a time without failure.

Now, on this subject, I must say that the self-lighters are more efficient if protected from draughts by a globe or similar covering; otherwise, the action of the gas passing from the nipple of the burner is liable to be blown on one side, and the heating of the porous plug takes so much longer.

Thanking Mr. Vezey for drawing attention to the matter,

Believe me, yours respectfully,
A LANTERNIST.

:o:

Notes and Queries

H. J. Field.—Write to Mr. E. Baruch Blaker, Boro' Studio, Worthing.

W. H. Young.—Unless you have great confidence in the persons to whom you intend showing the apparatus, we would suggest that you first obtain a provisional patent.

J. F. Hammond.—1. You can back it as suggested, it is often done, and the result is a great improvement. 2. We cannot say that any one electric lamp is better than the others. You will find some excellent ones advertised in this Journal. 3. Yes, it is quite necessary to use a condenser with the electric light, the same optical system prevails as though you had an oil lamp.

Gas.—We cannot offer any opinion, but we received a letter a few days ago from a reader saying at that time he had a 6-feet cylinder containing 7½ feet of gas; but seeing that the compressors are very particular, we would suggest that his gauge was not quite what it should be.

Kingsbury writes:—(1). With a blow-through jet is more or less oxygen used than with a mixed jet? (2). Could a blow-through jet be used with the hydrogen supplied from a cylinder, instead of from the house main? (3). Can the ejector jet be used with two cylinders instead of house gas from the main? *Ans.*—(1). Blow-through about 4½ feet per hour, and mixed about 5 feet for the same time. (2). Yes, but be sure and keep it well under control, or you may find that it will soon be used up. (3). Yes.

A. Freeman.—From particulars you supply about the particular jet becoming clogged up in the manner mentioned, certain qualities of hydrogen will cause this, and if the jet is cleaned out but imperfectly, good gas when then used will help to form an accumulation. If, as you say, the gas you now use does not make another jet clog, we should think that there still remained some of the crust, and it will even then go on forming—there is nothing for it but to ensure the inside of the jet being absolutely clean, and great pains should be taken to ascertain that it is so.

A. W. B. R.—The party evidently says what he does, as it is a single and not a bi-unial lantern which he wished to dispose of, and evidently brings all the arguments to bear, to impress upon you that it is not a bi-unial but a single lantern you should get. Had he a bi-unial instead of a single to dispose of, it is quite possible that he would argue in the opposite strain.

T. H. Y.—Fasten a cord to each corner and pass through the pulleys and draw taut. You will find single cords along the poles better than lacing.

T. W. Grant.—We fail to see what you mean by "the extra lens," but if you place a rectangular prism in front of the lens that is all that is necessary.

Ejecter.—Yes you can use it with absolute safety. There is also an injector jet on the market.

Explosions.—See reply to J. B. Colt & Co., and others.

W. H. Young.—Thanks for photograph.

And. Caird.—We have sent your letter and stamp for reply to the writer of the article. He will, doubtless, reply to you.

J. C. White.—1. The numbers of journal you speak of are 1d. each, postage extra. 2. Write to Mr. Chadwick, of Manchester, and he will send you particulars of his gasometer, &c.

M. Derry.—1. Yes, Wood's jet is both good and safe 2. From Mr. Brown, of Ossulston Street. See his advertisement.

E. H. Stephenson.—We are supplied at present thanks.

G. J. Rothwell and others.—Mr. Scott, the writer of the article died some months ago, and we know of no one who knows of the ingredients mentioned. The line about his supplying the varnish should have been taken out of the article.

G. J. Rothwell.—1. Twist the wire round it. 2. A bath with a water jacket, then place in say a cup, which float in the hot water.

J. A. Graham, J. B. Colt & Co. (New York), and others.—Shortly before going to press we had the opportunity of seeing the new oxygen producer at work for a few minutes only, but unless we tried it during a series of exhibitions to ascertain the effect of the chlorine upon the thin rubber bellows container, we cannot offer any definite opinion, but certainly the apparatus produces gas very quickly; the gas goes direct from the tubular retort into the rubber bellows without the intervention of any wash bottle. For a single lantern a new cartridge has to be inserted every few minutes, and if the lantern operator is sufficiently adept he can see to this, but with a bi-unial lantern, to ensure things running smoothly, it would be well to get a boy to push the cartridges in as required; this, however, is quickly done and requires no experience. For a single light for two hours, about 25 cartridges are required, and this quantity the Company will supply for about 2s.